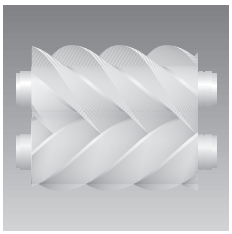
6060560 |COMPRESSOR 460/60/3 116CFM |Cu

Item Text

COMPRESSOR 460/60/3 116 CFM 150 PSI

Manufacturer: ATLAS COPCO
Mfr Part No : GA22FF
Size : 116 CFM @ 150 PSI
Add'l Info : ROTARY SCREW, SINGLE STAGE, OIL INJECTED,
AIR COOLED, FULL FEATURE UNIT
WITH INTEGRATED REFRIGERATED DRYER,
COMPRESSOR FAILURE DRY CONTACTS.
30 HP,
460V, 3 PHASE, 60 HZ
40 IN LONG X 31 IN WIDE X 71 IN HIGH 1318 LBS.
EACH COMPRESSOR INCLUDES: FOOD GRADE LUBRICANT (GA-FG)
AND GENERAL ALARM CONTACTS



Atlas Copco Stationary Air Compressors

GA5 up to GA90C

User Manual for Elektronikon® regulator

Important

1. This Manual applies exclusively to the compressors equipped with the Atlas Copco Elektronikon regulator.

2. This Manual must be used together with the relevant Instruction books for the compressors.

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- This instruction book meets the requirements for instructions specified by the machinery directive 89/392/EEC and is valid for CE as well as non-CE labelled machines.

No. 2920 1207 05

Registration code: APC G5-10/'98 / 38 / 995
APC G11-22 / 38 / 983
APC G30-45/'98 / 38 / 995
APC G55-90C/'96 / 38 / 988

Replaces 2920 1207 04

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Web-site: http://www.atlascopco-compressors.com

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1 GENERAL DESCRIPTION

The electronic regulator automatically controls the compressor, i.e.:
- Loading and unloading the compressor
- Stopping the compressor whenever possible
- Restarting the compressor when required

In order to control the compressor and to read and modify programmable parameters, the regulator has a control panel provided with:
- LEDs indicating the status of the compressor
- A display indicating the operating conditions, a service need or a fault
- Keys to control the compressor and to have access to the data collected by the regulator
- Buttons to manually start and stop the compressor
- An emergency stop button

In general, the regulator has following functions:
- Controlling the compressor
- Protecting the compressor
- Monitoring components subject to service
- Automatic restart after voltage failure (made inactive)

1.1 Controlling the compressor

The regulator maintains the net pressure between programmable limits by automatically loading and unloading the compressor depending on the air consumption.

The regulator takes into account a number of programmable settings, such as:
- Unloading pressure
- Loading pressure
- Minimum stop time
- Maximum number of motor starts

The regulator stops the compressor whenever possible (when the expected unloading period exceeds a programmed value) to reduce the power consumption and restarts it automatically when the net pressure decreases. In case the expected unloading period is below a programmed value, the regulator keeps the compressor running to prevent too-short standstill periods.

When the compressor has stopped automatically and the net pressure decreases, the regulator will start the compressor before the net pressure has dropped to the loading pressure to prevent the net pressure from falling under the programmed minimum level.

When stopping the compressor manually, the regulator will unload the compressor for 30 seconds and then stop the compressor. **1)**

1.2 Protecting the compressor

1.2.1 Shut-down and motor overload

If the compressor element outlet temperature exceeds the programmed shut-down level, the compressor will be stopped. This will be indicated on the control display.

The compressor will also be stopped in case of overload of the drive motor or fan motor. **2)**

1.2.2 Shut-down warning

If the compressor element outlet temperature exceeds a programmed value just below the shut-down level, this will also be indicated to warn the operator before the shut-down level is reached.

1.2.3 Control of motor rotation direction

Regulators for GA90C and for later production GA30 up to -75 are provided with a control function for correct rotation direction of the motor: a message will appear on the display of the regulator if the rotation direction is wrong. In this case, switch off the voltage and reverse two incoming lines.

1.2.4 Warning

A warning message also appears if the cooling water temperature or dewpoint temperature exceeds the warning level. See section 7.2.4.

1.3 Monitoring components subject to service (service warning)

The regulator continuously monitors critical components (oil, oil filter, oil separator and air filter). Each input is compared to programmed limits. Exceeding these limits causes a message on the control display to warn the operator to replace the indicated component.

1.4 Automatic restart after voltage failure

The regulator has a built-in function to automatically restart the compressor if the voltage is restored after voltage failure. For compressors leaving the factory, this function is made inactive. If desired, the function can be activated. Consult Atlas Copco.

Footnotes chapter 1

1) If the compressor was running at that moment in automatic unloading condition for 10 seconds, it will remain running unloaded for 30 - 10 = 20 seconds before stopping.

2) For GA30 up to GA90C only.

2 CONTROL PANEL

2.1 Indicators, keys and buttons (Fig. 2.1)

Ref.	Designation	Function
1	Automatic operation LED	Indicates that the regulator is automatically controlling the compressor: the compressor is loaded, unloaded, stopped and restarted depending on the air consumption and the limitations programmed in the regulator.
2	Voltage on LED	Indicates that the voltage is switched on.
3	General alarm LED	Is alight if a warning or shut-down warning condition exists or if a sensor is out of order. See section 7. Blinks in case of shut-down, if a sensor with shut-down function (e.g. TT11) is out of order or after an emergency stop. See section 7.
4	Display	Indicates messages concerning the compressor operating condition, a service need or a fault. See section 3.1.
5	Function keys	Keys to control and program the compressor. See section 3.4.
6	Scroll keys	Keys to scroll through the display. See section 3.2.
7	Tabulator key	Key to go to the next field of the display. See section 3.3.
8	Start button	Push button to start the compressor. LED (1) lights up indicating that the regulator is operative (in automatic operation). The LED goes out after unloading the compressor manually.
9	Stop button	Push button to stop the compressor. LED (1) goes out. The compressor will stop after running in unloaded condition for 30 seconds. See also section 1.1.
S3	Emergency stop button	Maintained-action push button to stop the compressor immediately in case of emergency. After remedying the trouble, unlock the button by turning it to the left or by pulling it out.

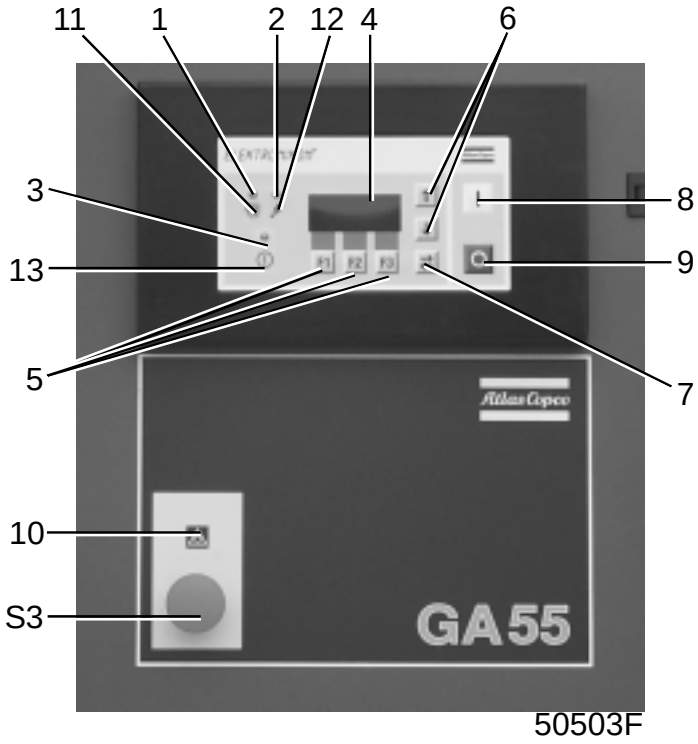

Fig. 2.1. Control panel

2.2 Pictographs (Fig. 2.1)

Ref.	Designation
10	Emergency stop
11	Automatic operation
12	Voltage on
13	Alarm

Delivery air		
bar		7.0
Auto loaded		
Menu	More	Unld
F1	F2	F3

Fig. 2.2. Typical example of a display

3 DISPLAY - KEYS

3.1 Display (4-Fig. 2.1)

The display has four lines of 16 characters. A typical display is shown in Fig. 2.2. It indicates:

1. On the first three lines:
   - The name of the sensor of which the actual reading is displayed
   - The unit and actual reading of the sensor
   - Messages regarding the compressor operating condition (compressor loaded, off, etc.), a service need (e.g. for the oil filter and air filter) or a fault (e.g. shut-down)
2. On the fourth line, just above the three function keys (F1/F2/F3), the actual functions of these keys.

3.2 Scroll keys (6-Fig. 2.1)

These keys, labelled with vertical arrows, allow to scroll through the display.

As long as a downwards pointing arrow is shown at the utmost right position of the display, the key (6) with the same symbol can be used to see the next item.

As long as an upwards pointing arrow is shown at the utmost right position of the display, the key (6) with the same symbol can be used to see the previous item.

3.3 Tabulator key (7-Fig. 2.1)

This key, labelled with two horizontal arrows, allows the operator to go to the next field of the display, e.g. during modifying of programmable parameters.

3.4 Function keys (5-Fig. 2.1)

The keys are used:
- To manually load/unload the compressor
- To call up or program settings
- To reset an active motor overload, shut-down or service message, or an emergency stop
- To have access to all data collected by the regulator

The function keys allow to make the required selection from a menu of possibilities. The functions of the keys vary depending on the displayed menu. The actual function is abbreviated and indicated on the bottom line of the display just above the relevant key. Only the active and relevant functions at a moment are shown.

4 MENU-DRIVEN CONTROL PROGRAMS

In order to facilitate programming and controlling, menu-driven control programs have been implemented in the regulator.

4.1 Function of control programs (Figs. 4.1 up to 4.3)

Program	See section	Function
MAIN DISPLAY	5	Shows in short the operation status of the compressor. Is the gateway to all functions.
MAIN MENU	6	Is the gateway to other functions via submenus.
SUBMENUS		
Status data	7	Calling up the status of the compressor protection functions (shut-down and shut-down warning). Resetting of a shut-down and motor overload.
Measured data	8	Calling up the actual measured temperature at the compressor element outlet, the dewpoint (on compressors with integrated air dryer) and the status of the motor overload protection. **On GA55 up to -90C** also the actual pressure difference over the oil separator, the status of the fan motor overload protection and on water-cooled compressors also the actual cooling water outlet temperature.
Hours	9	Calling up the running hours, loading hours, regulator hours and number of motor starts.
Service	10	Calling up and resetting the service messages for the oil, oil filter, oil separator, air filter.
Test	11	Display test.
Modify settings	12	Modifying the settings for regulation (e.g. loading and unloading), for protection (e.g. temperature shut-down level) and for service (e.g. for the oil).
Timer	13	Programming the compressor start/stop commands.
Configuration	14	Programming the time, date, display language, units, motor start mode and date format. **On GA5 up to GA45**, dewpoint temperature display mode and the dewpoint protection.

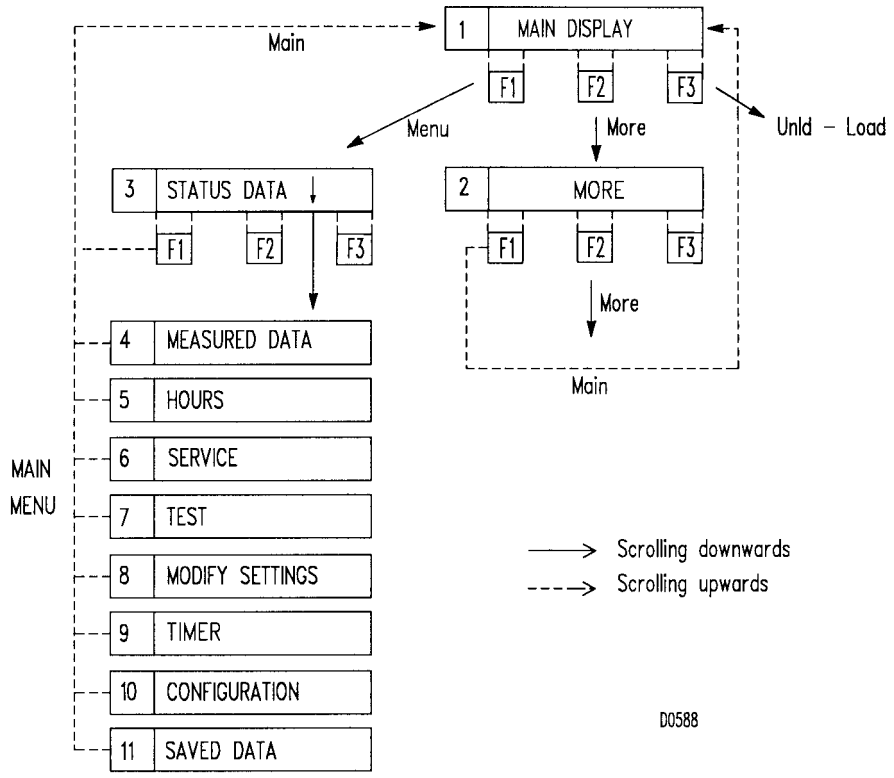

Fig. 4.1. General menu flow

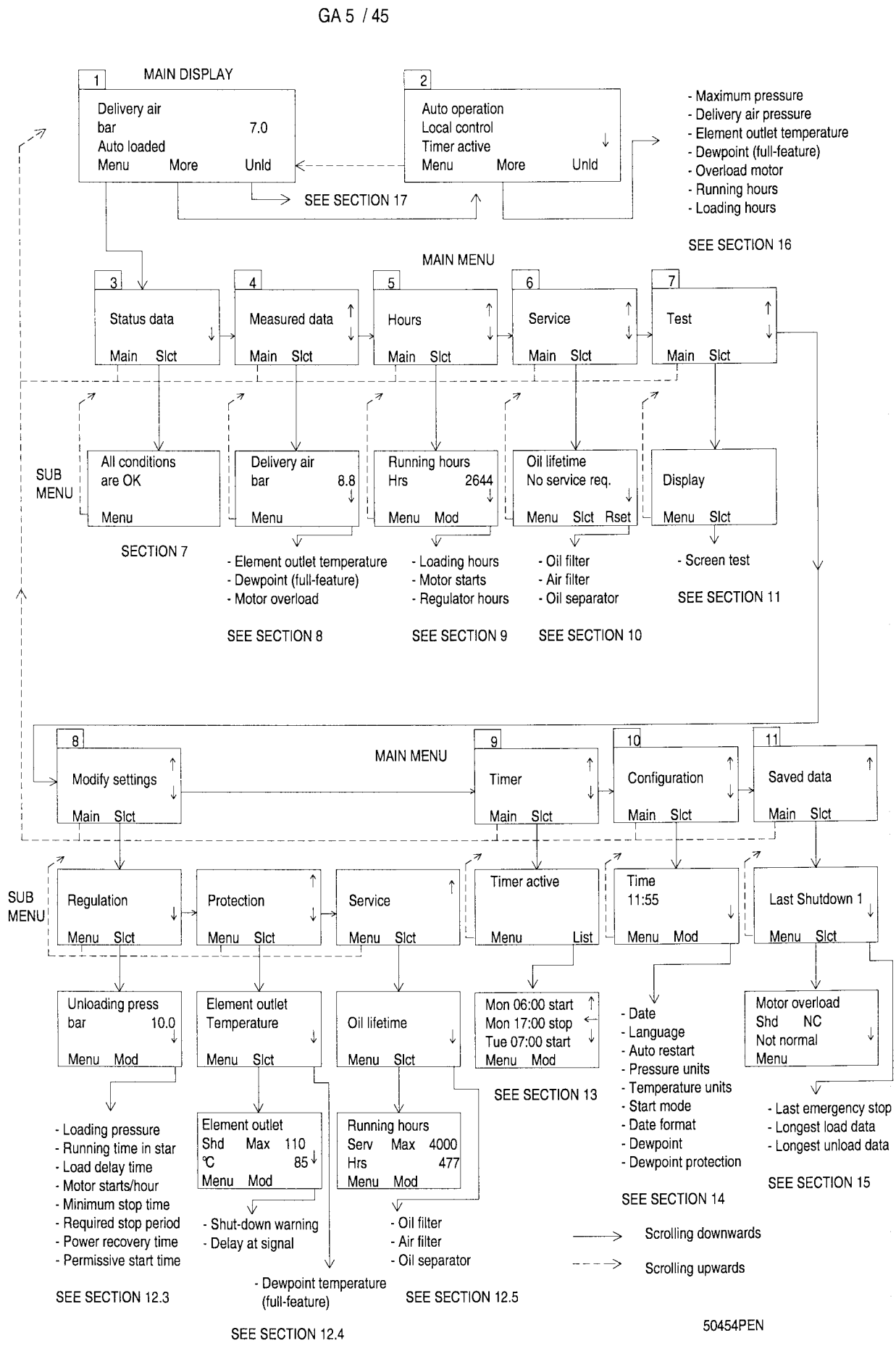

Fig. 4.2. Menu flow for regulator of GA5/45

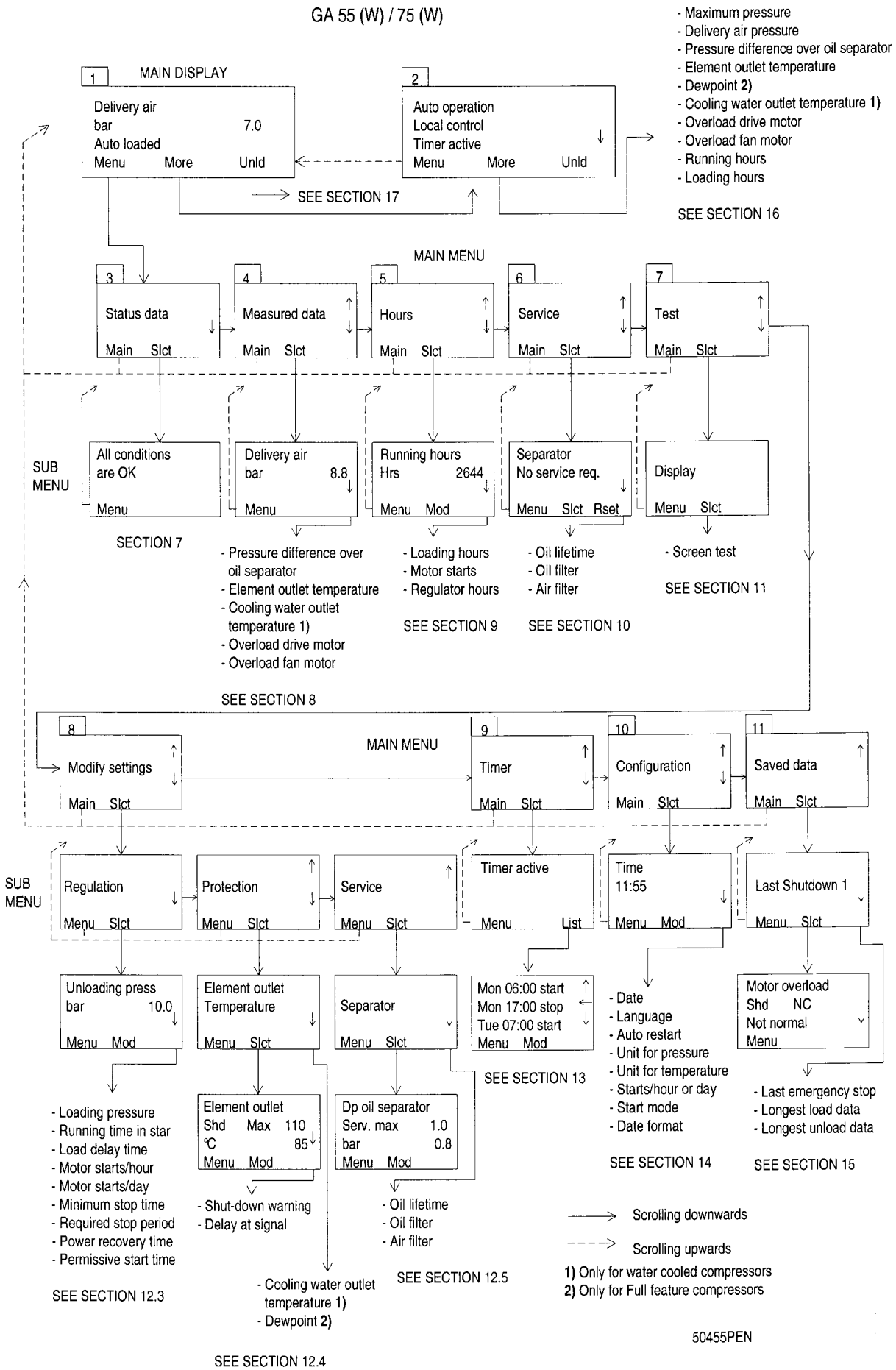

Fig. 4.3. Menu flow for regulator of GA55(W)/75(W)/90C

Program	See section	Function
Saved data	15	Calling up the saved data: last shut-down, last emergency stop, longest load, longest unload.
MORE	16	Quick look at the actual status of the compressor: automatic or manual control, local or remote control, start/stop timer on or off, max. pressure, delivery air pressure and temperature, dewpoint, motor overload status, running and loading hours, **on GA55 up to GA90C** also the pressure difference over the oil separator.
MANUAL LOAD/UNLOAD	17	To manually load/unload the compressor.

4.2 Selecting a menu (Figs. 4.1 up to 4.3)

4.2.1 Main display

When the voltage is switched on, the MAIN DISPLAY is shown automatically, showing in short the operation status of the compressor. The other menus are selected by pressing one of the function keys (5-Fig. 2.1).

4.2.2 Calling up other menus

MAIN MENU
Pushing the key <<Menu>> initiates the MAIN MENU, giving access to most other functions via submenus; the submenus can be selected by pressing the key <<Slct>> (select); see section 6.

MORE
Pushing the key <<More>> gives the operator a quick look at the actual status of the compressor; see section 16.

UNLOAD or LOAD
The keys <<Unld>> (unload) and <<Load>> are used to manually unload and load the compressor respectively. See section 17.

4.2.3 Returning to the main menu or main display

MAIN MENU
Whenever displayed on the bottom line of the screen (4-Fig. 2.1), press the key <<Menu>> to return from a submenu to the MAIN MENU.

MAIN DISPLAY
Whenever displayed, press the key <<Main>> to return from a menu to the MAIN DISPLAY.

5 MAIN DISPLAY: compressor status in short/gateway to all functions

5.1 Function

The main display shows in short the compressor operation status and is the gateway to all functions implemented in the regulator.

5.2 Procedure

The main display is shown automatically when the power is switched on.

If the function keys or arrow keys (5, 6 and 7-Fig. 2.1) are not used for 4 minutes, the regulator will automatically return to the main display.

Exception is made, when the screen is left untouched when modifying data in the regulator. In this case, the screen will remain unchanged, since the regulator does not take a decision whether to accept or refuse the new data.

Delivery air		
bar		7.0
Auto loaded		
Menu	More	Unld
F1	F2	F3

Fig. 5.1. Example of the main display

Line	Indicates	Remarks
1	Sensor which is active	-
2	Unit-actual reading	The unit for pressure can be bar, psi or kg/cm^2 depending on the programmed selection. The unit for temperature can be C (degrees celsius) or F (degrees fahrenheit). See section 14.
3	Compressor status	Examples: - Compressor Off - Manual Unloaded If the timer is activated (see section 13), the message "timer active" will also be shown.
3	Motor overload, shut-down or warning	If the unit is shut down, the regulator will automatically call up the status display (section 7) on which the cause for the shut-down is indicated. It remains possible to have a closer look at other parameters related to the shut-down by means of the menus.

Line	Indicates	Remarks
3	Service required	Indicates that one of the monitored components needs servicing. Consult section 10 to find out the exact cause for this message.
3	Sensor error	Indicates that a sensor is out of order: **On GA5 up to GA45:** - Temperature sensor at the outlet of the compressor element - Outlet pressure transducer - **On Full-feature compressors**, the dewpoint sensor - Stop the compressor. Switch off the voltage and depressurize the compressor as described in the relevant instruction book. Check the sensor wiring. Replace the sensor or transducer, if necessary.
3	Sensor error	Indicates that a sensor is out of order: **On GA55 up to GA90C:** - Temperature sensor at the outlet of the compressor element - Outlet pressure transducer - Pressure difference sensor of the oil separator - **On water-cooled compressors**, the water outlet temperature sensor - **On Full-feature compressors**, the dewpoint sensor Stop the compressor. Switch off the voltage and depressurize the compressor as described in the relevant instruction book. Check the sensor wiring. Replace the sensor or transducer, if necessary.
3	Remote control	Indicates that the compressor is set in remote control. Consult Atlas Copco.
4	Functions of keys below display	See section 4.2.

Note
When more than one message needs to be displayed (e.g. both warning and service), the messages will be displayed one after the other for 3 seconds.

6 MAIN MENU: Gateway to other functions

6.1 Function

The main menu gives the operator access to most other functions via submenus.

6.2 Procedure

The main menu is activated by pressing:
- The key <<Menu>> on the main display (Fig. 5.1)
- The key <<Menu>> on whatever submenu display

Status data ↓

Main	Slct	
F1	F2	F3

Fig. 6.1. Example of a main menu

The display indicates the name of the submenu which can be selected (only one name is shown, use the scroll keys (6-Fig. 2.1) to find the other names).

In this example, the display shows:
- That the <<Status data>> submenu can be selected
- That other submenus are available using the scroll key
- That the key <<Main>> can be used to return to the main display
- That the key <<Slct>> (select) can be used to select the submenu <<Status data>> to get more detailed information

7 STATUS DATA SUBMENU: Calling up status of protection functions and resetting

7.1 Function

The status data submenu gives information regarding the status of the compressor protection functions (shut-down, warning and shut-down warning) and allows resetting of a shut-down and motor overload.

7.2 Procedure

1. Activate the main menu by pressing the key <<Menu>> (5-Fig. 2.1).
2. The first option shown on the second line of the display is <<Status data>>.
3. Press the key <<Slct>> (select) (5-Fig. 2.1).

7.2.1 No shut-down warning message or shut-down message exists

In this case, LED (3-Fig. 2.1) is out and the message on the display indicates that all conditions are normal (Fig. 7.1):

All conditions are OK		
Menu		
F1	F2	F3

Fig. 7.1. Example of a status data screen

7.2.2 A shut-down message exists

LED (3-Fig. 2.1) blinks and the shut-down screen (Fig. 7.2) automatically appears on the display if the compressor is shut down.

In case of a shut-down due to too high an element outlet temperature, a screen similar to that in Fig. 7.2 will appear:

Element outlet				
Shd		Max		110
C				112
Menu	**		**	Rset
F1		F2		F3

Fig. 7.2. Example of a status data screen

The top line of the display, the actual temperature (112 degrees celsius) and the indicators (**) are blinking.

It remains possible to scroll through other menus and then return to the status data menu. In this case, the first option of a submenu will be shown, i.e. <<shut-downs>>. This option can be selected by pressing the key <<Slct>> (select) to return to the shut-down screen (Fig. 7.2). The other options (i.e. <<protections>> and <<start failures>>) can be selected by scrolling until the desired option appears and then pressing the key <<Slct>> (select) to collect other information. If the message <<All conditions are OK>> appears when selecting <<protections>> and <<start failures>>, this means that:

- Besides the existing shut-down condition there are no other alarms
- There are no start failures

See section 7.3 to reset the shut-down message.

7.2.3 A shut-down warning message exists

1. LED (3-Fig. 2.1) is alight and the main display screen will change into a screen similar to the one in Fig. 7.3 if a shut-down warning exists.

Delivery air				
bar				7.0
*Shutd		Warn*		
Menu	**	More	**	Unld
F1		F2		F3

Fig. 7.3. Example of a shut-down warning screen

Element outlet				
Shdw		Max		100
C				106
Menu	**		**	
F1		F2		F3

Fig. 7.4. Example of a shut-down warning screen

2. The indicators (**) are blinking and the warning message appears alternately with the messages indicating whether the compressor runs unloaded or loaded.
3. Press the key <<Menu>>: the main menu appears (Fig. 6.1) with blinking indicators (**).
4. Press the key <<Slct>> (select), use the scroll key until the option <<protections>> is shown and select this option. A screen similar to the one in Fig. 7.4 appears, indicating that the temperature at the outlet of the compressor element (106 degrees celsius) is too high. Consult the Instruction book to remedy the trouble.
5. If necessary, stop the compressor by means of button **O** (9-Fig. 2.1) and wait until the compressor has stopped.
6. Switch off the voltage and inspect the compressor.
7. The warning message will disappear automatically as soon as the warning condition disappears.

7.2.4 A warning message exists

1. LED (3-Fig. 2.1) is alight and the main display screen will change into a screen similar to that shown in Fig. 7.5.

Delivery air				
bar				7.0
*Warning	*			
Menu	**	More	**	Unld
F1		F2		F3

Fig. 7.5. Example of a warning screen

2. The indicators (**) are blinking and the warning message appears alternately with the messages indicating whether the compressor runs unloaded or loaded. This warning indicates that:
   - **On water-cooled GA55/75 compressors**, the cooling water outlet temperature exceeds the programmed warning level.
   - **On Full-feature compressors** (compressors with integrated air dryer), the dewpoint temperature exceeds the warning level.

3. Looking for more details is carried out in a similar way as described in steps 3 and 4 of section 7.2.3. If necessary, stop the compressor and remedy the fault.

7.3 Shut-down reset

1. Suppose that the shut-down screen as shown in Fig. 7.2 exists.
2. The display indicates:
   - <<Shd>>: the compressor is shut down due to too high a compressor <<element outlet>> temperature
   - <<Max>>: the maximum level is <<110>> degrees celsius
   - The actual temperature is <<112>> degrees celsius

   The fourth line of the screen shows the available function keys, i.e.:
   - <<Menu>> to return to the submenu allowing to choose between <<shut-downs>>, <<protections>> and <<start failures>>
   - <<Rset>> (reset)
3. Switch off the voltage and remedy the trouble. After remedying and when the shut-down condition has disappeared, switch on the voltage and press the key <<Rset>> (reset). Press the keys <<Menu>> and <<Main>> to return to the main display and restart the compressor by means of button **I** (8-Fig. 2.1).

7.4 Reset of motor overload

If the drive motor overload relay (F21) or fan motor circuit breaker (Q15) **1)** trips, the compressor will be shut down and LED (3-Fig. 2.1) will blink. Following screen appears:

Motor overload			
Shd	NC		
Not normal			
Menu **	**	**	Rset
F1	F2		F3

Fig. 7.6. Example of a motor overload display

The example indicates that:
- The compressor is shut down due to motor overload
- The contacts of the motor overload relay are normally closed
- The condition is <<Not normal>> (i.e. the contacts are actually open)

The top line of the display and the indicators (******) are blinking.

1. Switch off the voltage and remedy the trouble. The overload relay (F21) resets itself after cooling off but the circuit breaker (Q15) **1)** must be reset manually. The <<Not normal>> message will change into <<Normal>>.
2. Switch on the voltage and press the key <<Rset>> (reset) and then the keys <<Menu>> and <<Main>> to return to the main display.
3. Restart the compressor by means of button **I** (8-Fig. 2.1).

Footnotes chapter 7

1) For GA30 up to GA90C only.

8 MEASURED DATA SUBMENU: Calling up measured data

8.1 Function

To call up the measured data:
- The actual pressure
- The actual temperature at the outlet of the compressor element
- The programmed shut-down and warning temperatures for the compressor element
- The dewpoint (only for Full-feature compressors)
- The status of the motor overload protection

on GA55/90C also:
- The actual pressure difference over the oil separator
- The status of the fan motor overload protection

on water-cooled GA55/75 also the actual cooling water outlet temperature

8.2 Procedure

1. Activate the main menu by pressing the key <<Menu>> (5-Fig. 2.1).
2. Scroll through the available options by using the scroll keys (6-Fig. 2.1) until the option <<Measured Data>> is shown on the second line of the display.
3. Press the key <<Slct>> (select) (5-Fig. 2.1). A screen similar to the one in Fig. 8.1 appears:

Delivery air			
bar		8.8	
			↓
Menu			
F1	F2	F3	

Fig. 8.1. Example of a measured data display

The display shows that the outlet pressure is 8.8 bar and that the key ↓ can be used to call up other measured data.

4. If one of the sensors is linked to a protection function (shut-down or motor overload), a screen similar to the one in Fig. 8.2 appears:

Element outlet			↑
C		85	
Shd	Max	110	↓
Menu	Warn		
F1	F2	F3	

Fig. 8.2. Example of a measured data display

The display indicates that:
- The reading shown is the compressor <<element outlet>>

temperature
- A shut-down (<<Shd>>) level is programmed, i.e. <<110>> degrees celsius maximum (<<Max>>)
- The actual temperature is <<85>> degrees celsius
- The key <<Warn>> can be used to look at the warning level, see step 7.

5. On Full-feature compressors only, the scroll keys can be used to show the dewpoint. See Fig. 8.3.

Dewpoint			↑
C		4	
Warn	Max	15	↓
Menu			
F1	F2	F3	

Fig. 8.3. Example of a measured data display

The display indicates that:
- The reading shown is the <<dewpoint>> temperature
- A warning (<<Warn>>) level is programmed, i.e. <<15>> degrees celsius maximum (<<Max>>)
- The actual temperature is << 4>> degrees celsius

Note: on GA5 up to GA45, only the status of the dewpoint (normal or not normal) is shown unless the dewpoint display mode in the <<Configuration>> submenu, see section 14, is set to value.

6. The vertical arrow at the right-hand side indicates that the display can be scrolled downwards to show other measured data, e.g. the motor overload condition; see Fig. 8.4.

Overload motor			↑
Normal			
Shd	PeSt	NC	
Menu			
F1	F2	F3	

Fig. 8.4. Example of a measured data display

The display indicates that:
- The contacts of the motor overload relay are normally closed (<<NC>>)
- The condition of the relay is <<Normal>> (i.e. contacts closed)
- Opening of the contacts of the relay will shut down (<<Shd>>) the compressor
- PeSt (permissive start function): the compressor will not start in case of a motor overload

7. After pressing the key <<Warn>> on the screen shown in Fig. 8.2, a screen similar as in Fig. 8.5 is shown:

Element outlet		
C		85
Shdw	Max	100
	Rtrn	
F1	F2	F3

Fig. 8.5. Example of a measured data display

The display indicates that a shut-down warning (<<Shdw>>) level is programmed, i.e. 100 degrees celsius maximum (<<Max.>>). Press the key <<Rtrn>> to return to the screen of Fig. 8.2.

9 HOURS SUBMENU: Calling up running hours, loading hours, regulator hours and motor starts

9.1 Function

To call up the running hours and loading hours of the compressor, the hours the regulator has been in operation as well as the number of motor starts.

9.2 Procedure

1. Activate the main menu by pressing the key <<Menu>> (5-Fig. 2.1).
2. Scroll through the available options by using the scroll keys (6-Fig. 2.1) until the option <<Hours>> is shown on the second line of the display.
3. Press the key <<Slct>> (select) (5-Fig. 2.1).

The display will show the running hours. By using the scroll keys (6-Fig. 2.1), other options can be selected to call up the data of the other timers, i.e. loading hours, motor starts and regulator hours.

Typical example (Fig. 9.1)

In this example the option <<Loading hours>> is selected:

Loading hours			↑
Hrs	1000		
			↓
Menu	Mod		
F1	F2	F3	

Fig. 9.1. Example of loading hours display

The display indicates that the compressor has run loaded for 1000 hours.

The bottom line of the screen shows the available function keys, i.e. <<Menu>> to return to submenu and <<Mod>> to modify the value of the indicated timer; if this should be required, consult Atlas Copco.

10 SERVICE SUBMENU: Calling up and resetting service messages

10.1 Function

To call up and reset service messages for following monitored components: oil, oil filter, oil separator and air filter.

10.2 Calling up service messages

1. Activate the main menu by pressing the key <<Menu>> (5-Fig. 2.1).
2. Scroll through the available options by using the scroll keys (6-Fig. 2.1) until the option <<Service>> is shown on the second line of the display.
3. Press the key <<Slct>> (select) (5-Fig. 2.1).

   The display will show the name of the monitored component and the message whether service is needed or not. A vertical scroll arrow appears on the display indicating to scroll through the display to check the condition of the other components subject to service.

Oil filter					↑
Service req					↓
Menu	**	Slct	**	Rset	
F1		F2		F3	

Fig. 10.1. Example of service display

The display indicates:
- The component which is monitored: the <<oil filter>>
- That the filter needs service (<<Service req>>)

The display also indicates the part number of the service kit to be used.

The bottom line of the screen shows the available function keys, i.e.
- <<Menu>> to return to the main menu
- <<Slct>> (select) to read more details; see section 10.3
- <<Rset>> to reset the service item; see section 10.4

10.3 Calling up running hours and service level

1. Call up the related service item. See section 10.2.
2. Press the key <<Slct>> (select) to get the running hours and service level (see Fig. 10.2): the related service timer has counted for 2050 running hours since previous filter change. The programmed lifetime is <<2000>> running hours; as a consequence, the filter must be replaced and the service message reset as described in section 10.4.

Running hours		
Hrs		2050
Serv	Max	2000
**	Rtrn	** Rset
F1	F2	F3

Fig. 10.2. Example of a service display

The bottom line again shows the available function keys, i.e.:
- <<Rtrn>> (return) to return to the message whether service is required or not
- <<Rset>> (reset) to reset the service item; see section 10.4

10.4 Service reset

To reset the service timer:
1. If the air filter is indicated: stop the compressor, wait until the compressor has stopped and replace the element.
2. If the oil, oil separator or oil filter is indicated: stop the compressor, wait until the compressor has stopped, unscrew the oil filler plug one turn to depressurize the receiver and change the oil or replace the component as the case may be.
3. Call up the service menu for the related component as described above.
4. Press the key <<Rset>> (reset): the timer is reset to 0. The regulator will ask for confirmation (Yes) or cancelling (No).

Note
Each service item must be reset individually.

11 TEST SUBMENU: Display test

11.1 Function

To carry out a display test, i.e. to check whether the display and LEDs are still intact.

11.2 Procedure

1. Activate the main menu by pressing the key <<Menu>> (5-Fig. 2.1).
2. Scroll through the options by using the keys (6-Fig. 2.1) until the option <<Test>> is shown on the second line of the display.
3. Press the key <<Slct>> (select) (5-Fig. 2.1).

   The display shows the option <<Display>>. Press the key <<Slct>>.
   During testing, the regulator will generate a series of patterns on the display which enable the operator to check that each pixel still functions normally; at the same time the LEDs are lit.

4. Press the key <<Menu>> to return to the submenu.

12 MODIFY SETTINGS SUBMENU: Modifying settings for regulation, protection and service

12.1 Function

To modify a number of programmable parameters, including:

1 Regulation settings:
- Unloading pressure
- Loading pressure
- Motor running time in star
- Load delay time
- Number of motor starts/hour
- Minimum stop time (i.e. the time period during which the compressor, if stopped automatically, remains stopped whatever happens with the air net pressure)
- Required stop period (the compressor will not be stopped automatically by the regulator unless a standstill period equal to the sum of the minimum stop time and required stop period is expected)
- Power recovery time (if automatic restart after voltage failure is activated) **1)**
- General permissive start time (not used for these GA compressors)

2 Protection settings:
- Shut-down level for the compressor element outlet temperature
- Shut-down warning level for the compressor element outlet temperature
- Delay time for signal (i.e. the time period during which the shut-down signal must exist before the compressor is shut down)

For GA Full-feature (integrated air dryer) **also**:
- Dewpoint warning level (**not for GA5 FF up to GA45 FF**)
- Delay time for signal (i.e. the time period during which the warning signal must exist before the warning message appears)
- Delay time at starting (i.e. the time period during which the warning signal is ignored after starting to allow the dryer to reach the dewpoint temperature)

On water-cooled GA55/75 compressors also:
- Warning level for the cooling water outlet temperature
- Delay time for signal (i.e. the time period during which the warning signal must exist before generating the warning)
- Delay time at start (i.e. the time period after starting which must expire before generating a warning)

3 Service settings:
Service level for the:
- Oil
- Oil filter
- Air filter
- Oil separator

12.2 Procedure

1. Activate the main menu by pressing the key <<Menu>> (5-Fig. 2.1).
2. Scroll through the available options by using the scroll keys (6-Fig. 2.1) until the option <<Modify Settings>> is shown on the second line of the display.
3. Press the key <<Slct>> (select) (5-Fig. 2.1).

   A submenu is started, allowing the operator to select between following options:
   - Regulation
   - Protections
   - Service

4. Scroll through the options by using the scroll keys (6-Fig. 2.1) until the desired option is shown on the display.
5. Press the key <<Slct>> (select).

12.3 Modifying compressor regulation settings

1. Call up the modify settings submenu and select the option <<regulation>>. See section 12.2.
2. The first option (i.e. unloading pressure) of a list of programmable parameters is shown. Use the scroll keys (6-Fig. 2.1) to select the parameter to be modified.
3. For each parameter, the screen and modifying procedure are similar to the example below.

12.3.1 Modifying the loading pressure

1. Consult sections 12.1 up to 12.3 for selecting the option <<loading pressure>>.
2. When selecting the loading pressure, a display similar to that shown in Fig. 12.1 will appear:

Loading press			↑
bar		6.6	
			↓
Menu	Mod		
F1	F2	F3	

Fig. 12.1. Example of a modifying screen (regulation settings)

The example in Fig. 12.1 indicates:
- On line 1 the related parameter, i.e. <<Loading pressure>>
- On line 2 the unit and the actual value, i.e. <<bar 6.6>>
- On the bottom line the available selections, i.e. <<Menu>> to return to the submenu and <<Mod>> to modify the parameter.

3. After pressing the key <<Mod>> (modify) the value of the parameter starts blinking and the functions of the keys (5-Fig. 2.1) change into:

   F1 <<Prog>> (program)
   F2 <<Lim>> (limitations)
   F3 <<Canc>> (cancel)

Loading press		
bar		"7.0"
Prog	Lim	Canc
F1	F2	F3

Fig. 12.2. Example of a modifying screen (regulation settings)

4. Modify the value by means of the scroll keys (6-Fig. 2.1). Figures 12.1 and 12.2 show the displays when changing the loading pressure from 6.6 bar into 7.0 bar.
5. Press the key <<Prog>> to program the new value or the key <<Canc>> to cancel the modification operation (the original value will be retained).

Notes
The regulator will not accept new values beyond the limitations. See section 18.
It is possible to check the limitations which are valid for the parameter to be modified by selecting <<Lim>> (limits). A typical example is shown in Fig. 12.3.

Prog limits		
min	4.0	
max	7.4	
	Rtrn	
F1	F2	F3

Fig. 12.3. Example of a modifying screen (regulation settings)

12.4 Modifying protection settings

1. Call up the modify settings submenu and select the option <<protections>>. See section 12.2. A screen as shown in Fig. 12.4 appears.

Element outlet			
Temperature			↓
Menu	Slct		
F1	F2	F3	

Fig. 12.4. Example of a modifying screen (protection settings)

Note:
On Full-feature compressors with integrated air dryer, a second option, i.e. dewpoint, can be selected. See section 12.4.2.
On water-cooled GA55/75 compressors, a second option, i.e. cooling water outlet temperature, can be selected. See section 12.4.3.

12.4.1 Element outlet temperature

2. Press the key <<Slct>> (select): a screen similar to the one shown below appears (Fig. 12.5):

Element outlet			
Shd	Max	110	
C		85	↓
Menu	Mod		
F1	F2	F3	

Fig. 12.5. Example of a modifying screen (protection settings)

The example in Fig. 12.5 indicates:
- On line 1, the name of the sensor (Compressor <<Element outlet>>)
- On line 2, the type of parameter (<<Shd>> or shut-down), the level type (<<Max>> or maximum level) and the actual programmed value (<<110>>)
- On line 3, the unit (<<C>>) and the actual measured value (<<85>>)

3. To modify the shut-down level, press the key <<Mod>> (modify) and then use the scroll keys (6-Fig. 2.1).
4. Use the key <<Prog>> to program the new value or the key <<Canc>> to cancel the modification operation (the original value will be retained).

Notes
The regulator will not accept new values beyond the limitations. See section 18.
It is possible to check the limitations which are valid for the parameter to be modified by selecting <<Lim>> (limits).

5. The arrow on the modifying screen (Fig. 12.5) indicates to use the scroll key ↓ (6-Fig. 2.1) to show the relevant shut-down warning (<<Shdw>>) value (e.g. <<100>> degrees celsius); see Fig. 12.6.

Element outlet			↑
Shdw	Max	100	
C		85	↓
Menu	Mod		
F1	F2	F3	

Fig. 12.6. Example of a modifying screen (protection settings)

6. To modify the shut-down warning level, press the key <<Mod>> (modify) and then use the scroll keys (6-Fig. 2.1).
7. Use the key <<Prog>> to program the new value or the key <<Canc>> to cancel the modification operation (the original value will be retained).
8. The arrow ↓ on the screen (Fig. 12.6) indicates to use the scroll key ↓ (6-Fig. 2.1) to show the programmed delay for the shut-down; see Fig. 12.7.

Element outlet			↑
Delay at signal			
sec		0	
Menu	Mod		
F1	F2	F3	

Fig. 12.7. Example of a modifying screen (protection settings)

The example in Fig. 12.7 indicates:
- On line 1, the name of the sensor (Compressor <<Element outlet>>)
- On line 2, the type of parameter (<<Delay at>> shut-down <<signal>>)
- On line 3, the unit (<<sec>>) and the actual value (<<0>>)

9. If it should be necessary to modify the nominal setting of 0 seconds, first consult section 18 before pressing the key <<Mod>> (modify) and then using the scroll keys (6-Fig. 2.1) for modifying.
10. Use the key <<Prog>> to program the new value or the key <<Canc>> to cancel the modification operation (the original value will be retained).

12.4.2 Dewpoint temperature

For GA Full-feature (compressor with integrated air dryer), a downward pointing arrow appears on the third line of the screen (Fig. 12.4) indicating that a second option, i.e. dewpoint temperature, can be selected:

1. Press the scroll key ↓ (6-Fig. 2.1). Following screen appears:

Dewpoint			↑
Temperature			
Menu	Slct		
F1	F2	F3	

Fig. 12.8. Example of a modifying screen (protection settings)

2. Select the option by pressing the key <<Slct>> (select).
3. **On GA5 FF up to GA45 FF**, the warning level for high dewpoint depends on the ambient temperature and is not programmable, a screen as shown in (Fig. 12.10) appears. **On GA55/90C FF**, a screen similar to the one shown in (Fig. 12.9) appears:

Dewpoint			
Warn	Max	15	
C		4	↓
Menu	Mod		
F1	F2	F3	

Fig. 12.9. Example of a modifying screen (protection settings)

The example in Fig. 12.9 indicates:
- On line 1, the name of the sensor (<<Dewpoint>>)
- On line 2, the type of parameter (<<Warn>> or warning), the level type (<<Max>> or maximum level) and the actual programmed value (<<15>>)
- On line 3, the unit (<<C>>) and the actual measured value (<<4>>)

4. Modifying is carried out in a similar way as described in steps 3 and 4 of section 12.4.1.
5. The arrow on the modifying screen (Fig. 12.9) indicates to use the scroll key ↓ (6-Fig. 2.1) to show the relevant delay at signal (i.e. the time period during which the warning signal must exist before the warning message appears (e.g. <<3 sec>>). See Fig. 12.10.

Dewpoint			↑
Delay at signal			
sec		3	↓
Menu	Mod		
F1	F2	F3	

Fig. 12.10. Example of a modifying screen (protection settings)

6. Modifying is carried out in a similar way as described in steps 3 and 4 of section 12.4.1.
7. The arrow ↓ on the modifying screen (Fig. 12.10) indicates to use the scroll key ↓ (6-Fig. 2.1) to show the delay at start (i.e. the time period during which the warning signal is ignored after starting to allow the dryer to reach the dewpoint temperature); see Fig. 12.11.

Dewpoint			↑
Delay at start			
sec		255	
Menu	Mod		
F1	F2	F3	

Fig. 12.11. Example of a modifying screen (protection settings)

The example in Fig. 12.11 indicates:
- On line 1, the name of the sensor (<<Dewpoint>>)
- On line 2, the type of parameter (<<Delay at start>>)
- On line 3, the unit (<<sec>>) and the actual value (<<255>>)

8. Modifying is carried out in a similar way as described in steps 3 and 4 of section 12.4.1.
9. Use the key <<Menu>> and the key ↑ to return to the initial screen as shown in Fig. 2.1.

12.4.3 Cooling water outlet temperature

For water-cooled GA55/75 compressors, a downwards pointing arrow appears on the third line of the screen (Fig. 2.1) indicating that a second option, i.e. cooling water outlet temperature can be selected:

1. After pressing the arrow key on the screen shown in Fig. 12.4, a screen similar to that in Fig. 12.12 is shown:

Cool water out			↑
Temperature			
Menu	Slct		
F1	F2	F3	

Fig. 12.12. Example of a modifying screen (protection settings)

2. Press the key <<Slct>> (select): a screen similar to the one shown below appears (Fig. 12.13).

Cool water out			
Warn	Max	60	
C		45	↓
Menu	Mod		
F1	F2	F3	

Fig. 12.13. Example of a modifying screen (protection settings)

The example in Fig. 12.13 indicates:
- On line 1, the name of the sensor (<<cool water out>>)
- On line 2, the type of parameter (<<warn>>) and the programmed maximum (<<Max. 60>>)
- On line 3, the unit and actual value (<<45>>)

3. To modify the warning level, press the key <<Mod>> (modify) and use the scroll keys (6-Fig. 2.1).
4. Use the key <<Prog>> to program the new value or the key <<Canc>> to cancel the modification (the original value will be retained).

Notes
The regulator will not accept new values beyond the limitations. See section 18. It is possible to check the limitations by selecting <<Lim>> (limits).

5. The arrow on the screen (Fig. 12.13) indicates to use the scroll key ↓ (6-Fig. 2.1) to show the programmed delay for the warning signal; see Fig. 12.14.

Cool water out			
Delay at signal			
sec		0	↓
Menu	Mod		
F1	F2	F3	

Fig. 12.14. Example of a modifying screen (protection settings)

6. If necessary, use the key <<Mod>> and the scroll keys for modifying.
7. Use the key <<Prog>> to program the new value or the key <<Canc>> to cancel the operation (the original value will be retained). See also step 4.
8. The arrow on the screen (Fig. 12.14) indicates to use the scroll key ↓ (6-Fig. 2.1) to show the programmed delay during start; see Fig. 12.15.

Cool water out			↑
Delay at start			
sec		0	
Menu	Mod		
F1	F2	F3	

Fig. 12.15. Example of a modifying screen (protection settings)

9. Consult steps 6 and 7 if modifying is desired.

12.5 Modifying service settings

1. Call up the modify settings submenu and select the option <<service settings>>. See section 12.2.
2. The first option of a list of programmable service settings is shown. See section 12.1 for the list of all programmable parameters. Use the scroll keys (6-Fig. 2.1) to select the parameter to be modified, e.g. oil lifetime (Fig. 12.16).

Oil lifetime			↓
Menu	Slct		
F1	F2	F3	

Fig. 12.16. Example of a modifying screen (service settings)

3. Select the parameter to be modified by pressing the key <<Slct>> (select). If selecting the oil lifetime, a screen similar to the one in Fig. 12.17 appears:

Running hours		
Serv	Max	4000
Hrs		477
Menu	Mod	
F1	F2	F3

Fig. 12.17. Example of a modifying screen (service settings)

4. To modify the setting of the running hours, press the key <<Mod>> (modify) and then use the scroll keys (6-Fig. 2.1).
5. Use the key <<Prog>> to program the new value or the key <<Canc>> to cancel the modification operation (the original value will be retained).

Notes
- The regulator will not accept new values beyond the limitations. See section 18.
- It is possible to check the limitations which are valid for the parameter to be modified by selecting <<Lim>> (limits).

Footnotes chapter 12

1) If required, the automatic restart function after voltage failure can be activated by Atlas Copco. **The power recovery time** (the period within which the voltage must be restored to have an automatic restart) **can be set between 1 and 254 seconds or to symbol 00!. If the power recovery time is set to 00!, the compressor will always restart after a voltage failure, no matter how long it takes to restore the voltage**. Provide a label near to the control panel warning the operator that the compressor automatically restarts if the voltage is restored.

13 TIMER SUBMENU: Programming compressor start/stop commands

13.1 Function

To program up to 56 start/stop commands for the compressor.

13.2 Procedure

1. Activate the main menu by pressing the key <<Menu>> (5-Fig. 2.1).
2. Scroll through the available options by using the scroll keys (6-Fig. 2.1) until the option <<Timer>> is shown on the second line of the display.
3. Press the key <<Slct>> (select) (5-Fig. 2.1).
4. Initially, the list with start/stop commands is empty, hence the timer function is switched off (<<Timer inactive>>). Following screen appears:

Timer not activated		
		List
F1	F2	F3

Fig. 13.1. Timer screen

13.2.1 To program start/stop commands

1. Press the key <<List>>. The display will show a message that the list is empty (<<No items>>). The bottom line will now include the key <<Mod>> (modify).
2. Press the keys <<Mod>> and then <<Add>>. The command <<MON 00:00 stop>> will be shown.
3. Using the scroll keys (6-Fig. 2.1), modify this command as required, as described in section 13.2.4. Add and delete commands as required, as described in sections 13.2.5 and 13.2.6.
4. Activate the timer as described in section 13.2.2.

13.2.2 To activate/deactivate the timer

1. **The timer can only be activated if at least one start/stop command is programmed.**
2. Select the menu <<Timer>>. Press the key <<Mod>> (modify); the message <<Timer not activated>> will blink.
3. Use the scroll keys (6-Fig. 2.1) to change the message into <<Timer active>>.
4. Press the key <<Prog>> (program) to program the Timer active function or key <<Canc>> to cancel the modify operation. If activated, the regulator will execute the programmed commands.
5. **The timer can be deactivated again. In this case, the programmed start/stop commands will not be executed (but remain in the memory of the regulator).**

13.2.3 To display the list of commands

1. Press the key <<List>> on the timer screen. A typical display is shown in Fig. 13.2.

Mon	06:00 start		↑
Mon	17:00 stop		←
Tue	07:00 start		↓
Menu	Mod		
F1	F2	F3	

Fig. 13.2. Example of start/stop command screen

   The vertical arrows at the right-hand side indicate to use the vertical scroll keys to select the next and previous start/stop commands. The horizontal arrow indicates the command which is accessible at that moment.
2. Use the key <<Menu>> to return to the submenu or the key <<Mod>> to modify the start/stop commands.
3. After pressing the key <<Mod>>, three selections are shown on the bottom line of the display (Fig. 13.3):

Mon	06:00 start		↑
Mon	17:00 stop		←
Tue	07:00 start		↓
Mod	Add	Del	
F1	F2	F3	

Fig. 13.3. Example of start/stop command screen

4. Use:
   - <<Mod>> to modify the command indicated by the horizontal arrow
   - <<Add>> to add a new command at the location of the horizontal arrow
   - <<Del>> to delete start/stop commands

13.2.4 To modify a command

1. Suppose the command <<Mon 17:00 stop>> is to be modified, i.e. stopping at 18 o'clock instead of 17 o'clock.
2. Press the key <<List>> and scroll through the compressor start/stop commands until the command to be modified is indicated by the horizontal arrow on the screen. Press the key <<Mod>>. Press the key <<Mod>> again. The day indication will blink (Fig. 13.4). The day can be modified using the scroll keys (6-Fig. 2.1).
3. Press the tabulator key (7-Fig. 2.1) to go to the next field to be modified (the hour indication). See Fig. 13.5. Modify using keys (6).
4. Proceed in the same way to modify, if necessary, the minutes

indication and the start/stop indication. See Figs. 13.6 and 13.7.

5. Press the key <<Prog>> (program) to program the new command or the key <<Canc>> (cancel) to quit without reprogramming.
6. The regulator will ask if it is desired to change more commands.

	06:00 start	
"Mon"	17:00 stop	
	07:00 start	
Prog	Canc	
F1	F2	F3

Fig. 13.4. Programming the day

Mon	start	
Mon	"18" stop	
Tue	start	
Prog	Canc	
F1	F2	F3

Fig. 13.5. Programming the hours

Mon	start	
Mon	"00" stop	
Tue	start	
Prog	Canc	
F1	F2	F3

Fig. 13.6. Programming the minutes

Mon	06:00	
Mon	18:00 "stop"	
Tue	07:00	
Prog	Canc	
F1	F2	F3

Fig. 13.7. Programming the start/stop mode

Important:
It is necessary to program the start/stop commands in successive order timewise. Program the commands from Monday till Sunday, e.g.:
Monday 07.30 start
Monday 18.00 stop
Tuesday 08.00 start
Tuesday 17.00 stop
etc.

The regulator does not accept a new compressor start/stop command unless it is situated between the next and previous start/stop command timewise. If not, the new command is not accepted and the command line remains blinking. In this case, either modify the command or use the key <<Canc>> (cancel) to quit the modification operation.

Make sure that the timer function is activated (<<Timer active>>). If not, the programmed start/stop commands will not be executed.

13.2.5 To add a command

1. Press the key <<List>> and scroll through the commands until the command after which a new command is to be added appears, followed by a horizontal arrow.
2. Press the keys <<Mod>> (modify) and <<Add>>. **1)** The command which was indicated by the horizontal arrow will be copied and the day indication of the copied command will blink.
3. The way of modifying this command is similar to the description in section 13.2.4.
4. The regulator will ask if it is desired to change more commands.

13.2.6 To delete a command

1. Press the key <<List>> and scroll through the commands until the command to be deleted appears, followed by a horizontal arrow.
2. Press the keys <<Mod>> (modify) and <<Del>> (delete). **1)** The bottom line of the screen shows following selections:
   <<All>> to delete all commands
   <<This>> to delete the command indicated by the horizontal arrow
   <<Canc>> (cancel) if the delete selection must not be carried out
3. When selecting <<All>>, the regulator will ask <<Are you sure to delete all commands?>> By pressing the key <<Yes>> all commands are deleted.
4. The regulator will ask if it is desired to change more commands. If so, press the keys <<Yes>> and<< Add>>.

Footnotes chapter 13

1) If the key <<Yes>> was pressed at the question <<Do you want to change another command>>, the display will include the options <<Add>> and <<Del>> (delete). In this case, one of these keys can be pressed without using the key <<Mod>> (modify) first.

14 CONFIGURATION SUBMENU: Reprogramming time, date, display language, units, motor start mode and date format

14.1 Function

To reprogram a number of parameters. These parameters are:
- Time
- Date
- Language on display (two languages are provided)
- Auto restart **1)**
- Unit for pressure (bar, psi or kg/cm^2)
- Unit for temperature (C or F)
- Motor start mode (star-delta or direct-on-line)
- Format of date (day/month/year or month/day/year or year/month/day)

Only on GA5 FF up to GA45 FF:
- Dewpoint display mode (status or value)
- Dryer protection (warning or shut-down)

On GA55/90C also:
- Starts/day or starts/hour

14.2 Procedure

1. Activate the main menu by pressing the function key <<Menu>> (5-Fig. 2.1).
2. Scroll through the available options by using the scroll keys (6-Fig. 2.1) until the option <<Configuration>> is shown on the second line of the display.
3. Press the key <<Slct>> (select) (5-Fig. 2.1).
4. The first option shown is <<Time>>. If another option is desired, scroll through the display (using scroll keys 6-Fig. 2.1) and select (using key <<Slct>>).
5. In case of option <<Time>>, the second line on the screen indicates the actual setting, e.g. 14:30.
6. If it is desired to modify the time, press function key <<Mod>> (modify) (5-Fig. 2.1). If not, press key <<Menu>> to return to the submenu.
7. After pressing the key <<Mod>> (modify), the first field (i.e. 14) will blink. Modify the hours using the scroll keys (6-Fig. 2.1). Then press the tabulator key (7-Fig. 2.1) to go to the next field (i.e. 30). The setting of this field can now be modified with the scroll keys.
8. The bottom line of the display will show two options:
   - <<Prog>> to program the new setting
   - <<Canc>> to cancel the new setting
9. Proceed in the same way for the other parameters to be modified. Use the scroll keys (6-Fig. 2.1) to modify the parameter.

Note
For most settings only one reprogrammable field is used; in this case the tabulator key (7-Fig. 2.1) to jump from one field to the other one is not needed.

Footnotes chapter 14

1) To be activated by Atlas Copco only

15 SAVED DATA SUBMENU: Calling up compressor data saved by regulator

15.1 Function

To call up the compressor data saved by the electronic regulator. These data are:
- Last shut-down data (indicated <<Last shutdown 1>>)
- Last emergency stop data (indicated <<Last Em stop 1>>)
- Longest load data (time, date, duration and other data reflecting the condition of that moment)
- Longest unload data (time, date, duration and other data reflecting the condition of that moment)

15.2 Procedure

1. Activate the main menu by pressing the key <<Menu>> (5-Fig. 2.1).
2. Scroll through the available options by using the scroll keys (6-Fig. 2.1) until the option <<Saved data>> is shown on the second line of the display.
3. Press the key <<Slct>> (select) (5-Fig. 2.1).
4. The first option is shown (i.e. <<Last shutdown 1>>). Scroll through the available options by using the scroll keys (6-Fig. 2.1) until the desired option is shown on the second line of the display.
5. Press the key <<Slct>> (select) (5-Fig. 2.1).
6. If desired, repeat steps 4 and 5 to look at the other options.

15.2.1 Example of the last shut-down data

1. Select option <<Last shut-down data 1>>. Following screen may appear:

Motor overload Shd Not normal Menu	NC		↓
F1	F2	F3	

Fig. 15.1. Example of a saved data screen

The display (Fig. 15.1) indicates:
- The last shut-down (<<Shd>>) was a <<motor overload>>
- The contacts of the overload relay are normally closed (<<NC>>)
- The contacts were <<not normal>>, i.e. open due to overcurrent
- On the bottom line the key <<Menu>> to return to the submenu

2. By using the scroll key ↓ (6-Fig. 2.1) following data are

shown (the data reflect the condition of the compressor at the moment of shut-down):
- Time
- Date
- Duration of longest load or unload period (if these data are selected)
- Number of running hours
- Number of loading hours
- Number of motor starts
- Outlet pressure
- Compressor element outlet temperature
- Condition of the motor overload function

3. Press the key <<Menu>> to return to the submenu and select another option, e.g. <<Last shutdown 2>> (i.e. the last shut-down but one) to consult the last shut-down data but one. Following screen may appear (Fig. 15.2):

Element outlet			
Shd		110	
C		110	↓
Menu			
F1	F2	F3	

Fig. 15.2. Example of a saved data screen

The display (Fig. 15.2) indicates:
- The shut-down (<<Shd>>) was due to too high a compressor <<element outlet>> temperature
- The shut-down value is programmed at 110 degrees celsius (<<Shd 110>>)
- The temperature increased to <<110>> degrees celsius
- On the bottom line the key <<Menu>> to return to the submenu

By using the scroll key ↓ (6-Fig. 2.1), other data related to the shut-down can be called up.

16 MORE FUNCTION: Quick look at actual compressor status

16.1 Function

To have a quick look at:
- The control status of the compressor, i.e. automatic or manual control, local or remote control, start/stop timer on or off
- The maximum allowable unloading pressure
- The actual outlet pressure
- The actual temperature at the compressor element outlet
- The dewpoint (on Full-feature compressors)
- The status of the motor overload protection
- The running and loading hours

On GA55/90C also:
- The pressure difference over the oil separator
- The status of the fan motor overload protection
- **On water-cooled compressors also**: the actual cooling water outlet temperature

16.2 Procedure

1. If necessary, activate the main display. See section 4.2.
2. Press the key <<More>>. A screen similar to Fig. 16.1 appears:

Auto operation		
Local control		
Timer active		
Menu	More	Unld
F1	F2	F3

Fig. 16.1. Example of a more display

<<Line 1>> indicates the automatic or manual operation status of the regulator.
<<Auto operation>> means that the regulator automatically adapts the operation of the compressor, i.e. loading, unloading, stopping and automatic restarting according to the programmed parameters.
<<Man operation>> means that the automatic pressure control function of the regulator is interrupted after manual intervention through the function keys on the keyboard (see section 17).

Line 2 indicates whether the regulator operates in local control or remote control mode.
<<Local control>> means that the start/stop and load/unload buttons on the keyboard are activated.
<<Remote control>> means that these functions are controlled remotely. Consult Atlas Copco.

Line 3 indicates whether the timer which generates time-based start and stop commands is activated or not. See section 13.

3. Press the key <<More>> again: the next screen shows the max. pressure, i.e. the max. allowable unloading pressure.
4. Press the key <<More>> to get following information (the data reflect the actual condition of the compressor):
   - The delivery air pressure
   - The element outlet temperature
   - Dewpoint (only on Full-feature compressors)
   - The status of the motor overload function
   - The number of running hours
   - The number of loading hours

   On GA55/90C also
   - The pressure difference over the oil separator
   - The status of the fan motor overload protection
   - **On water-cooled compressors also**: the actual cooling water outlet temperature
5. The last item shown is always the loading hours.

17 MANUALLY LOADING/ UNLOADING

17.1 Function

To load and unload the compressor manually.

Normally, the compressor is running in automatic operation, i.e. the electronic regulator loads, unloads, stops and restarts the compressor automatically. LED (1-Fig. 2.1) is then alight.

If required, the compressor can be unloaded manually. In this case, the compressor is switched out of automatic operation, i.e. the compressor remains running unloaded unless it is loaded again manually.

17.2 Manually unloading

1. If necessary, activate the main display. See section 4.2.
2. Press the key <<Unld>> (unload) (5-Fig. 2.1). LED (1-Fig. 2.1) goes out. The message <<Manual Unloaded>> appears on the display.

17.3 Manually loading

1. If necessary, activate the main display. See section 4.2.
2. Press the key <<Load>> (5-Fig. 2.1). LED (1-Fig. 2.1) lights up. Note that the command <<Load>> does not force the compressor in loaded condition, but it will switch the compressor to automatic operation again, i.e. the compressor will be loaded if required by the air net pressure.

18 PROGRAMMABLE SETTINGS

18.1 Regulation settings

		Minimum	Nominal	Maximum
Motor running time in star	sec	5	10	10
Load delay time	sec	0	0	10
Number of motor starts **for GA11 up to -22**	starts/hr	0	10	30
Number of motor starts **others**	starts/hr	0	10	10
Minimum stop time	sec	**1)**	20	30
Required stop period **2)**	sec	0	20	60
Permissive start period **10)**	sec	0	20	60
Power recovery time	sec	1	3	**12)**

		Minimum	Nominal	Maximum
Unloading pressure 3)				
13 bar Pack	bar(e)	4.1	12.5	13
13 bar Full-feature	bar(e)	4.1	12.5	12.7
10 bar Pack	bar(e)	4.1	9.5	10
10 bar Full-feature	bar(e)	4.1	9.5	9.7
7.5 bar Pack	bar(e)	4.1	7	7.5
7.5 bar Full-feature	bar(e)	4.1	7	7.2
100 psi Pack	bar(e)	4.1	6.9	7.4
100 psi Full-feature	bar(e)	4.1	6.9	7.1
125 psi Pack	bar(e)	4.1	8.6	9.1
125 psi Full-feature	bar(e)	4.1	8.6	8.8
150 psi Pack	bar(e)	4.1	10.3	10.8
150 psi Full-feature	bar(e)	4.1	10.3	10.5
175 psi Pack	bar(e)	4.1	12	12.5
175 psi Full-feature	bar(e)	4.1	12	12.2
Loading pressure 3)				
13 bar Pack	bar(e)	4	11.9	12.9
13 bar Full-feature	bar(e)	4	11.9	12.6
10 bar Pack	bar(e)	4	8.9	9.9
10 bar Full-feature	bar(e)	4	8.9	9.6
7.5 bar Pack	bar(e)	4	6.4	7.4
7.5 bar Full-feature	bar(e)	4	6.4	7.1
100 psi Pack	bar(e)	4	6.3	7.3
100 psi Full-feature	bar(e)	4	6.3	7
125 psi Pack	bar(e)	4	8	9
125 psi Full-feature	bar(e)	4	8	8.7
150 psi Pack	bar(e)	4	9.7	10.7
150 psi Full-feature	bar(e)	4	9.7	10.4
175 psi Pack	bar(e)	4	11.4	12.4
175 psi Full-feature	bar(e)	4	11.4	12.1

18.2 Protection settings

		Minimum	Nominal	Maximum
Compressor element outlet temperature **4)** (shut-down warning level)	celsius	**9)**	100	109
Compressor element outlet temperature **4)** (shut-down level)	celsius	101	110	120
Delay at shut-down signal **for GA55/90C 11)**	sec	0	0	7
For Full-feature also 13):				
Dewpoint warning temperature **for GA55/90C**	celsius	3	15	50
Delay at signal **6)**	sec	0	3	10
Delay at starting **14)**	sec	0	255	255
On water-cooled GA55/75 compressors also:				
Cooling water outlet temperature (warning level)	celsius	0	60	99
Delay at warning signal **6)**	sec	0	0	255
Delay at start **15)**	sec	0	0	255

18.3 Service settings

		Minimum	Nominal	Maximum
Oil filter lifetime (running hours)	hr	0	4000	**5)**
Oil lifetime (running hours)	hr	0	4000	**7)**
Air filter (running hours)	hr	0	4000	
Oil separator (running hours) **for GA5 up to -10**	hr	0	4000	
Oil separator (running hours) **for GA11 up to -90C**	hr	0	8000	
Oil separator (pressure difference) **for GA55 up to -90C**	bar	0	1	**8)**
Oil separator (delay at signal) **for GA55 up to -90C 6)**	sec	0	10	20

Footnotes chapter 18

1) Once the compressor is automatically stopped, it will remain stopped for the **minimum stop time**, whatever happens with the air net pressure. It is recommended to program this setting at minimum 20 seconds to prevent too-short stopping periods. If a lower setting should be required, consult Atlas Copco.

2) In automatic operation, the compressor will not be stopped by the regulator until a standstill period of at least the sum of the **minimum stop time** and **required stop period** is expected. However, if the decrease in air net pressure should require a new start of the compressor, the regulator will start the compressor after the **minimum stop time.**

3) The regulator does not accept illogical settings, e.g. if the unloading pressure is programmed at 7.0 bar(e), the maximum limit for the loading pressure changes into 6.9 bar(e). The recommended minimum pressure difference between loading and unloading is 0.6 bar.

4) The regulator does not accept illogical settings, e.g. if the warning level is programmed at 95 degrees celsius, the minimum limit for the shut-down level changes into 96 degrees celsius. The recommended difference between the warning level and shut-down level is 10 degrees celsius.

5) Use Atlas Copco oil filters. This interval is valid when using the recommended Atlas Copco Roto-injectfluid.

6) Is the time period during which the warning signal must exist before the warning message appears.

7) This interval is valid when using the recommended Atlas Copco Roto-injectfluid.

8) The recommended change interval is 8000 running hours or if exceeding 1 bar pressure drop over separator.

9) Recommended minimum setting: 70 degrees celsius. For testing the temperature sensor, this setting can be decreased to 50 degrees celsius. Reset the setting value after testing.

10) Is the period during which the start conditions are checked.

11) This is the period during which the signal must exist before the compressor is shut down. It is strongly recommended to program this time at 0 seconds. If it should be required to program this setting at another value (e.g. to deal with transient high temperatures when using an energy recovery system), consult Atlas Copco.

12) Is only accessible if the automatic restart is activated. **The power recovery time** (the period within which the voltage must be restored to have an automatic restart) **can be set between 1 and 254 seconds or to symbol 00!. If the power recovery time is set to 00!, the compressor will always restart after a voltage failure, no matter how long it takes to restore the voltage**. **To activate the automatic restart function, consult Atlas Copco**.

13) Full-feature version is the Pack version with integrated air dryer.

14) Is the time period during which the warning signal is ignored after starting to allow the dryer to reach the dewpoint temperature.

15) Is the period after starting which must expire before generating a warning. This setting should be less than the setting for delay at signal.

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